EXHIBIT 1

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RE: William Mears v. City of LA
Case: CV15-08441 JAK (AJWx)

Introduction

I am a board-certified emergency department physician with substantial experience in sudden cardiac arrest and sudden cardiac death, including my service as the Medical Director of the American Heart Association Training Center at the University of California, San Diego Center for Resuscitation Science. I am also an independent researcher on the physiologic effects of TASER Electronic Control Devices (ECD), OC spray, restraint and weight force, as well as Excited Delirium Syndrome (ExDS). I have served on multiple expert and consensus panels and have published multiple peer-reviewed papers and book chapters on these topics. My qualifications are further delineated at the end of my report.

I have been retained as an expert to review relevant materials and provide expert opinion on this matter, including the state of the medical and scientific literature, and to consider and render expert opinion on whether the restraining process or actions of the officers were contributory to Mr. Michael Mears' death, and if not, what was the likely cause. After careful review, it is my opinion to a reasonable degree of medical certainty that the use of the TASER ECD, the restraining process,

the OC spray and the spit mask did not cause nor were contributory to the death of Mr. Mears. Furthermore, it is my opinion to a reasonable degree of medical certainty that Mr. Mears' cardiac arrest resulted from Excited Delirium Syndrome from his cocaine use and facilitated from his underlying cardiac disease and significant hyperkalemia (elevated potassium levels). These opinions and related opinions are set forth in my report.

Materials Reviewed

I have reviewed extensive materials pertaining to the above referenced case. This includes, but is not limited to:

Case-Specific Materials

1. Complaint for Damages Filed 10/28/15
2. Complaint for Damages Filed 12/11/15
3. Force Investigation Division Report No. F003-15
4. Autopsy Report
5. Medical Records from UCLA Medical Center
6. VA Medical Records
7. EMS Records
8. Photographs
9. Deposition of Jonathan Gan
10. Deposition of Steven Beumer
11. Deposition of Jose Pedroza
12. Deposition of Jessica Gist
13. Deposition of Ken Lew
14. Deposition of Andrey Wilkins

Medical and Scientific Literature

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Overview of Opinions
(all opinions within this report are to a reasonable degree of medical or scientific probability)

An overview of my opinions is as follows with more description of each below:

1. **The use of the TASER ECD did not cause or contribute to the cardiac arrest and death of Mr. Mears.**

2. **The restraining process did not cause the sudden cardiac arrest and death in Mr. Mears.**

3. **The OC spray used on Mr. Mears did not cause or contribute to his cardiac arrest and death.**

4. **The spit mask used on Mr. Mears did not cause or contribute to his cardiac arrest and death.**

5. **Mr. Mears had an enlarged heart that placed him at significant risk of going into sudden cardiac arrest and dying.**

6. **Mr. Mears was suffering signs and symptoms consistent with excited delirium syndrome due to his cocaine use, which in and of itself can cause sudden cardiac arrest.**

7. **The significant hyperkalemia (elevated potassium levels) that Mr. Mears had contributed to his cardiac arrest and sudden death.**

Analysis

After reviewing the above listed materials, it appears that on December 24, 2014, Mr. Michael Mears started acting paranoid and delusional at the apartment in which he shared with Ingrid Lehman. Ingrid was concerned and called the apartment security to come and assist with Mr. Mears. Mr. Mears was 39 years old, 6'1" tall and weighed approximately 305 pounds at the time. Shortly after seeing Mr. Mears' behavior, the security guard called 911 to get EMS medical assistance. Paramedics were dispatched and arrived and realized that they needed additional back up and so an engine company was called for assistance. Mr. Mears was noted to be rolling around in the hallway on broken glass and he was covered in blood. Due to his violent activity, police back up was called to assist getting him into a safe and secure condition so that medical treatment could be initiated.

Two Los Angeles police department officers arrived, Officers Beumer and Pedroza. After assessing the situation, they requested additional back up as well as a TASER ECD and a beanbag shotgun be brought to the scene. Once additional officers arrived, the officers went hands-on with Mr. Mears, utilizing the TASER ECD multiple times to gain control over him and to get him restrained. Ultimately he was restrained and treatment was initiated by the paramedics. He was then transported to UCLA medical center. He was at UCLA medical center for over 30 minutes when his medical condition changed and he went into a PEA cardiac arrest. He was treated with medications and regained his pulse for a period of time but then later again went into cardiac arrest. He was found to be in renal failure with a dangerously elevated potassium level. Mr. Mears was resuscitated once again, regaining a heartbeat and blood pressure but not consciousness.

Ultimately, he never did regain consciousness and eventually died on December 26, 2014 in the hospital.

Given this history, there are a number of issues that need to be addressed in more detail below. All opinions given are to a reasonable, or higher, degree of medical probability based on the information currently available.

Detailed discussion and basis of opinions

1. ***The use of the TASER ECD did not cause or contribute to the cardiac arrest and death of Mr. Mears.***

There is a great deal of unwarranted concern of electrocution based on lay misunderstanding of the reported 50,000 volts (V) peak open arcing voltage used by TASER handheld ECDs. TASER handheld ECDs deliver only a fraction of the 50,000 V to the body. In the case of the TASER X26 ECD, the mean delivered pulse voltage is 580 V.

However, it is not the voltage, but the delivered electrical charge, that actually creates a risk for cardiac effects. For example, the static electricity from walking across a carpet can generate 30,000 to 100,000 V. However, the average actual delivered electrical current of the TASER X26 ECD is only about 1.9 milliamperes (mA) (or, 0.0019 amperes (A)) and the peak current is only about 3 A. By way of comparison, a Christmas tree light string will have on average current of 0.4 A or 400 mA, which is about 200 times the average delivered current of the TASER X26 ECD.

The amount of delivered electrical energy available to be transferred to a person is limited as the TASER X26 ECD is only powered by a battery of two 3 V cells (Duracell® CR123s), commonly used in some small digital cameras (such as the Nikon F6), not an electrical outlet or power generator. It is the TASER ECD's rapid cycling that can cause the subjects' muscles to

contract at about 19 times a second that can offer the effective incapacitation of the subject in probe mode, or painful compliance in drive-stun mode, while still offering a significant safety margin from electrical injury. Once the energy from an ECD is turned off, the subject is back to his physical baseline.

In order for an ECD to deliver a charge to the person the electrical circuit must be completed and maintained. If wires are broken, loose or there is a loss of connection, there will be TASER ECD download recordings of the discharge, despite there not being any actual delivered charge being applied to the subject. Thus, just because the TASER ECD download recorded a trigger pull, does not mean that the TASER ECD was indeed in contact with the subject and delivering the electrical stimulus.

There are no peer-reviewed published scientific or medical literature studies that conclusively demonstrate that TASER ECDs cause cardiac dysrhythmias or cardiac arrest in humans. More than 1.5 million volunteer subjects have undergone TASER ECD activations, and none have ever been reported to develop sudden cardiac arrest or die. Just because a TASER ECD was being used in proximity to his death, does not imply causation.

The TASER ECD data download from Officer Gan's device showed six trigger pulls over a time period of just under four minutes. The total time from the trigger pulls was 53 seconds of activation time (5, 32, 3, 5, 5, and 3 seconds each). As noted previously, in order for an ECD to deliver a charge to the person the electrical circuit must be completed and maintained. Thus, as a point of clarification, just because the TASER ECD download recorded 53 seconds of activation time from the TASER ECD, does not mean that the TASER ECD was indeed in contact with the subject and delivering the electrical stimulus for that amount of time. Often with moving, squirming, rolling and kicking, the contact of the device to the skin is disrupted.

If the TASER ECD had "electrocuted" Mr. Mears, his heart would have gone into a ventricular fibrillation (VF) at the time the electricity was being delivered and he would have

immediately lost consciousness at the time that the TASER ECD was firing or within 1-2 seconds after stopping. Subjects in VF cannot fight or struggle, let alone remain conscious as the blood flow to the brain ceases immediately. The fact that Mr. Mears was alive for an hour after the last TASER ECD activation confirms that the TASER ECD did not cause his heart to go into cardiac arrest. There are no delayed electrocutions. The cardiac arrest happens at the time the electricity is applied, not later. This conclusion is also supported in that Mr. Mears was in a normal, albeit fast, cardiac rhythm when he was subsequently placed onto a cardiac monitor.

In order for one to possibly conclude that a TASER ECD could even be considered to cause cardiac arrest, all of the following facts would need to be present:

1) The device probes would need to be penetrating deep into the chest wall for the tips to be close to the heart (a close dart to heart ratio);
2) The subject would need to have a thin chest wall;
3) The subject would need to be standing at the time of the TASER ECD activation and leaning forward so that the heart is closer to the anterior chest wall;
4) The subject would need to lose consciousness immediately during the TASER ECD activation or with 1-2 seconds after; and
5) The first cardiac rhythm would need to be ventricular fibrillation.

All of these would be needed to even consider the TASER ECD as the cause of death, but in this case with Mr. Mears, these facts are simply not present. In summary, all of the published scientific data as well as the objective evidence available in this case confirms that the use of the TASER ECD was non-contributory to the cardiac arrest and death of Mr. Mears.

2. The restraining process did not cause the sudden cardiac arrest and death in Mr. Mears.

During the period that Mr. Mears was being handcuffed, he was restrained in a prone position with a certain amount of weight placed on him initially to gain control over him. After Mr. Mears was restrained he was evaluated and treated by the EMS providers and transported to the hospital. He was alive for about an hour after the restraining process. He was not reported to complain of shortness of breath or difficulty breathing after being restrained and being tended to by the paramedics. He was reported to have clear lungs, unlabored breathing and a strong pulse of 190 beats/minute.

As Mr. Mears was alive for an hour after being restrained, this could not be an asphyxial death. Asphyxiation does not occur in a delayed fashion. If the weight force by the officers impacted Mr. Mears' ability to ventilate to the point of causing a cardiac arrest and sudden death by asphyxiation, the ventilations would have had to be restricted long enough to where blood oxygen levels would drop because there was not enough oxygen getting into Mr. Mears' lungs. When this occurs, the low blood oxygen levels will cause the heart to become irritable and eventually slow and then stop and the subject goes into cardiac arrest. This would be evident at the time the weight was removed if the position and weight force was responsible for asphyxiation. This does not happen in a delayed fashion as once weight is removed and ventilations restored, the subject will quickly return to normal oxygen levels in the blood. In this case, Mr. Mears was breathing and had a pulse well after he was restrained.

Given that Mr. Mears was alive before, during, and after the restraining, and that the cardiac arrest occurred an hour later at the hospital, the effort to restrain him and any weight force applied during the restraining process did not cause or contribute to Mr. Mears' cardiac arrest and death. There is no evidence that position, restraint or body weight caused or contributed to Mr. Mears' death.

3. The OC spray used on Mr. Mears did not cause or contribute to his cardiac arrest and death.

Although Mr. Mears was exposed to OC spray, there are no findings that this exposure was a contributing factor in his death. Shortness of breath associated with allergic reactions or reactive airway exacerbations have been reported with OC spray, similar to an allergic reaction a person would have to a cat or serious pollen allergy. When these types of reactions occur with OC spray, they occur almost immediately after exposure and have physical findings of wheezing and bronchospasm.

In this case, Mr. Mears was noted to be breathing without difficulty well after the OC spray was used with no evidence of wheezing or issues with being able to ventilate, which demonstrates no evidence of an allergic reaction. Acute anaphylactic reactions typically occur rapidly at the time of the exposure and are obvious. This was not the case with Mr. Mears. The OC spray exposure was non-contributory to Mr. Mears' death.

4. ***The spit mask used on Mr. Mears did not cause or contribute to his cardiac arrest and death.***

Mr. Mears had a spit mask placed on him for personal protection of the officers and medical staff working with him. This is reasonable and prudent. The mask has a mesh material that covers the head. This mesh material allows for air to pass through and does not impede one's ability to breathe. Even if pulled tightly over the nose and mouth, air passes through and allows for respirations. There was no clinical evidence that Mr. Mears was unable to breathe through the spit mask, and his oxygen levels were not documented as being abnormal. To date, there are no reports in the medical literature that identify spit masks as a cause of asphyxiation. The spit mask did not have any contributing effects to the subject's death.

5. ***Mr. Mears had an enlarged heart that placed him at significant risk of going into sudden cardiac arrest and dying.***

Additionally, besides being in a state of ExDS, Mr. Mears had a heart that was significantly enlarged, weighing 640 grams. The normal sized heart for a male is typically 300-350g and some sources note possibly up to 400g depending on body size. On autopsy, the structure of Mr. Mears' heart was abnormal as he was noted to have biventricular hypertrophy and four chamber dilatation noted. These are pathological and abnormal enlargements of the heart, not uncommon in people who use drugs like cocaine, and is the most likely cause in this case. This significant physical enlargement of the heart in and of itself can place an individual at increased risk for sudden cardiac arrest and death from an irregular heartbeat.

Given that the increased amount of cardiac tissue mass increases total oxygen demand compared with a normal sized heart, the heart's need for oxygen can outstrip the available oxygen in the blood supply in times of significant exertion, like an ongoing struggle and cocaine use. This will result in some of the heart tissue not getting enough blood flow and oxygen, which then causes cardiac ischemia which then results in the heart going into sudden cardiac arrest, as occurred with Mr. Mears.

6. ***Mr. Mears was suffering signs and symptoms consistent with excited delirium syndrome due to his cocaine use, which in and of itself can cause sudden cardiac arrest.***

Excited Delirium Syndrome (ExDS) is a syndrome most commonly caused by use of stimulant drugs like cocaine, methamphetamine or PCP and presents typically with aggressive and often paranoid behavior, but can also be caused by uncontrolled and untreated psychiatric illnesses, particularly schizophrenia. In fact, the original description of ExDS symptoms was in psychiatric patients. And in the days before there were medications to treat these patients, the mortality rate was reported at 75%. Currently, the majority of cases occurs in subjects using illicit drugs and is a significant cause of sudden cardiac arrest.

Classically, people suffering from ExDS are delusional often hallucinating, are hyperactive, may be violent despite threats or overwhelming force, fight inappropriately, be inappropriately

dressed for the conditions or take off their clothes, may be sweaty, have elevated body temperatures, and are often breathing fast. They are also often destructive and typically described as having superhuman strength. The subjects who tend to suffer sudden death are commonly noted to have elevated body temperatures.

The actual pathophysiology of ExDS is complex and not well understood. Anatomic and molecular evaluation of ExDS patients who die has focused primarily on postmortem brain examinations. Results demonstrate a characteristic loss of the dopamine transporter in the striatum of chronic drug abusers who die with clinical presentations consistent with and a diagnosis of ExDS. This suggests that one potential pathway for the development of ExDS is excessive dopamine stimulation in the striatum.

Even more supportive of central dopamine stimulation as a pathway is the fact that hypothalamic dopamine receptors are responsible for thermoregulation. These disturbances of dopamine neurotransmission may help explain the profound elevated temperatures reported in many ExDS patients as well as elevated levels of heat shock proteins, which are found in nearly every cell and act to protect cell proteins from a variety of stressors. The central dopamine hypothesis also provides a link to psychiatric etiologies and the delirious presentation in patients with ExDS.

ExDS places the individual at increased risk for sudden death syndrome, felt by most experts to be caused by an irregular or stoppage of the heartbeat, caused by the increased stress and work on the heart by the excited, over-stimulated, agitated physical state. There are data that this state is caused by a central brain effect and changes in neurotransmitter receptors. Once the heart goes into an irregular beat or stops, blood flow through the body ceases and shortly thereafter, the subject will lose consciousness due to lack of blood flow to the brain and stops breathing. Often, law enforcement officers will notice that the subject has quieted down, thinking that he has finally calmed down and given up the fight. Then a short time later is when someone will identify that the subject is suddenly in cardiac arrest.

The symptoms and findings for ExDS were described above, and Mr. Mears demonstrated many of the signs of ExDS. Mr. Mears exhibited paranoid behavior thinking that someone was out to get him. Delusions are a necessary component in the diagnosis of ExDS. Also, he had cocaine metabolite reported in his urine toxicology screen, and cocaine is a drug commonly associated with ExDS. He was described as him having significant strength. He also kept on trying to get up and resisted despite multiple uses of the TASER ECD, demonstrating tolerance to pain. Additionally, he was rolling around in broken glass and bleeding, demonstrating this pain tolerance. Overall, this clinical presentation by Mr. Mears is consistent with ExDS.

Elevated body temperature is often associated with ExDS. The body temperature documented at 103.5 degrees Fahrenheit. This is also consistent with ExDS. Not all people suffering from ExDS go into cardiac arrest and die, but when they do, they commonly have an elevated body temperature. Finally, the initial cardiac rhythm of pulseless electrical activity (PEA) is also classic for ExDS.

Clinically, Mr. Mears was suffering the signs and symptoms consistent with a diagnosis of excited delirium syndrome. He had an elevated temperature. He was delusional, having paranoid thoughts. He was not compliant with officers' commands and continued to struggle despite the use of the TASER ECD and officers trying to restrain him, and did not appear impacted by pain, as evidenced by his continued attempts to try to get up despite the TASER ECD use and rolling in broken glass. This was his clinical presentation.

To conclude that a person was actually suffering from ExDS and make the diagnosis, there needs to be inciting etiology, a cause. The two main recognized etiologies are active drug use of a stimulant drug, like cocaine or methamphetamine, or an untreated or under treated psychiatric disorder like schizophrenia or bipolar disorder. Mr. Mears had cocaine metabolites in his drug screen. Mr. Mears was demonstrating the classic presentation of ExDS from his cocaine use, and

this cocaine induced ExDS, in combination with cardiac abnormalities and life threatening elevated potassium levels, is the probable cause of his sudden cardiac arrest.

*4. **The significant hyperkalemia (elevated potassium levels) that Mr. Mears had contributed to his cardiac arrest and sudden death.***

Mr. Mears was found to have a potassium level of 7.4 at the time of his emergency department evaluation. The cause of this elevation is most likely due to acute kidney dysfunction from his recent cocaine use. This elevation was not caused by or worsened by the interaction with the officers.

By way of comparison, a normal potassium level is 3.5-5.0. Patients with chronic kidney failure on dialysis can get up to levels of 6.0 to 7.5 with little in the way of clinical findings, but other patients with acute elevations in potassium will have EKG changes at these levels and are already at significant risk to go into sudden cardiac arrest. Mr. Mears, with a potassium of greater than 7 was at increased risk to go into cardiac arrest at any moment, with or without any involvement by law enforcement. This severe hyperkalemia, along with his ExDS from his cocaine use, his ongoing struggling, and his underlying cardiac abnormality in combination is the cause of Mr. Mears' sudden cardiac arrest and ultimately his death.

Background

My background is that I am a full time faculty member in the department of emergency medicine at the University of California, San Diego Medical Center. I am residency trained and board certified in Emergency Medicine. I work full time as a practicing clinician in the Emergency Department of a busy urban hospital and serve as the clinical operations chief for our two

emergency departments with a combined annual census of approximately 70,000 visits. I currently serve as the Medical Director for Risk Management for the UC San Diego Health System. I also serve as the UCSD Medical Center's Medical Risk Management Committee Chair and Allocation Committee Co-Chair, as well as previously having served as the Chair of the Patient Care and Peer Review Committee, each of which are charged with the task of reviewing medical records and making determinations of standard of care. I am also the former Chief of Staff for the UCSD Medical Center.

I have worked for over 20 years as a faculty emergency physician at an urban-based emergency department that is contracted to receive patients who in custody, both as field arrests and for on-going care while incarcerated. I served as the UCSD Director of Custody Services overseeing hospital services for the San Diego County Sheriff's Department Medical Services for 16 years. I also have worked in a jail setting for over 18 years, staffing weekly sick call clinics on site at the San Diego Sheriff's jails throughout San Diego County. I have also served as the on-site medical director for the San Diego Sheriff's medical clinics for 16 years where I have trained staff physicians, participated in quality assurance, resource utilization, policy and protocol development and peer review. I have also overseen the physician staffing for seven jails in San Diego County over that time.

My Emergency Medical Services (EMS)/prehospital background and experience includes having been a flight physician with Lifeflight of San Diego and with Mercy Air, taking care of acutely injured patients at the scene. My EMS administrative roles include having been the Base Station Medical Director for UCSD, the Medical Director for the Palomar and Southwestern Paramedic College Training Programs, and the former Medical Director for the County of San Diego Emergency Medical Services (EMS) one of the largest EMS systems in the nation. In this role I was responsible for protocols and quality assurance of over 1000 paramedics and 4000 EMT's. I started the UCSD EMS/Disaster Medicine Fellowship Training Program and was the first

Fellowship Director and currently serve as the Assistant Director of the EMS/Disaster Medicine Division in the UCSD Department of Emergency Medicine and as the Medical Director for Carlsbad Fire Department and AirLinkUSA Air Ambulance Service. Other previous roles include have been the Medical Director for the San Diego County Metropolitan Medical Strike Team (MMST) and serving as medical back up for many SWAT operations. I am also the Principal Investigator for San Diego's Resuscitative Outcomes Consortium (ROC) site, a National Institute of Health (NIH) funded study to evaluate treatment options for out of-hospital cardiac arrest and severe traumatic injury including gunshot injuries.

I am knowledgeable of peer-reviewed medical and scientific research on TASER electronic control devices (ECDs) conducted by others. In fact, I was the lead author on work requested by the American Academy of Emergency Medicine (AAEM) to review the totality of the peer reviewed published medical literature on humans and come to conclusions regarding the necessary emergency department evaluation of patients being seen after receiving a TASER ECD activation. I have received federal grant funding and performed extensive clinical research on human subjects who have received TASER ECD applications (articles included in my curriculum vitae) which includes having been involved with over 200 TASER ECD activations and have personally received multiple applications of the device. I have written several book chapters on this topic and have lectured internationally about the physiologic effects of TASER ECDs.

I am knowledgeable of peer-reviewed medical and scientific research on the physiological effects of positional restraint and positional asphyxia conducted by others. I have also performed extensive clinical research on human subjects who have been restrained in various positions and with various amounts of weight being placed (articles included in my curriculum vitae) which includes having directly been involved with hundreds of subjects being restrained and studied, hundreds of patients restrained during my work in the emergency department and have personally been restrained with weights placed on me as well. I have been invited to lecture nationally and

internationally on this subject. Given my own interests in this area, I regularly perform a complete review of the literature regarding restraints and in custody death.

I am knowledgeable of peer-reviewed medical and scientific research on OC spray. I have written several peer reviewed papers and textbook chapters on this topic and have been invited to lecture on this topic. I have been exposed to OC spray personally and given my own interests in this area, I regularly perform a complete review of the literature regarding OC spray.

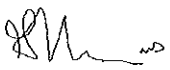
I am knowledgeable of peer-reviewed medical and scientific research for cardiac arrest and CPR practices. I was the Principle Investigator for San Diego's Resuscitative Outcomes Consortium (ROC) site, a National Institute of Health (NIH) funded study for ten years that involved over 200,000 cardiac arrest patients to evaluate treatment options for out of-hospital cardiac arrest and severe traumatic injury. I have published many peer-reviewed papers on the topic of cardiac arrest and cardiac resuscitation. I also serve as the Medical Director of the American Heart Association Training Center at the University of California, San Diego Center for Resuscitation Science since 2007, teaching Advanced Cardiac Life Support (ACLS) both locally and being asked to give lectures on cardiac arrest internationally. I have been an ACLS instructor for over 20 years. I also work at a busy urban comprehensive emergency department where I care for patients in cardiac arrest on a regular basis.

I was the lead author on work requested by the American College of Emergency Physicians (ACEP) to review the totality of the body of literature on the topic of Excited Delirium Syndrome (ExDS) and wrote up the findings of the expert consensus panel's white paper. I have published several papers on the topic, have been grant funded by the National Institute of Justice to study patients with ExDS and invited to write text book chapters on the topic of ExDS. I have also been invited to lecture nationally and internationally on the topics of Excited Delirium Syndrome.

As per Rule 26 formatting, Appendix A is a copy of my current Curriculum Vitae, which includes a list of all publications authored by me. Appendix B is a list of all cases in which I have

testified as an expert in trial or deposition within the preceding four years. Appendix C is my fee schedule. The knowledge base that I utilize has been developed over time from my years of clinical practice and experience, reading and training as well as research. Under penalty of perjury, I hereby swear that the opinions stated above are true and correct within a reasonable degree of medical probability.

Respectfully submitted,



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